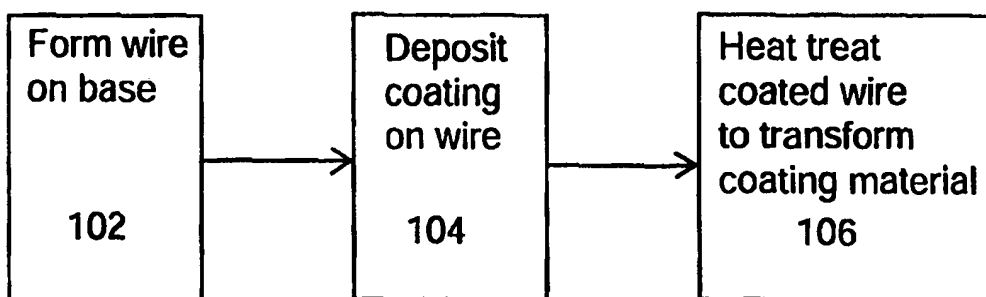




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<b>(21) International Application Number:</b> PCT/US98/12094 <b>(22) International Filing Date:</b> 11 June 1998 (11.06.98) <b>(30) Priority Data:</b> 08/931,923                      17 September 1997 (17.09.97)      US <b>(71) Applicant (for all designated States except US):</b> FORMFAC- TOR, INC. [US/US]; 5666 La Ribera Street, Livermore, CA 94550 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> CHEN, Jimmy, Kuo-Wei [US/US]; 4854 Braxton Place, Pleasanton, CA 94566 (US). ELDRIDGE, Benjamin, N. [US/US]; 651 Sheri Lane, Danville, CA 94526 (US). DOZIER, Thomas, H. [US/US]; 5801 Arlene Way, Livermore, CA 94550 (US). YEH, Junjye, J. [-/US]; 2511 Bess Avenue, Livermore, CA 94550 (US). HERMAN, Gayle, J. [US/US]; 3362 Blackhawk Meadow Drive, Danville, CA 94506 (US). KHANDROS, Igor, Y. [US/US]; 25 Haciendas Road, Orinda, CA 94563 (US). <b>(74) Agents:</b> OKAMOTO, James, K. et al.; Fenwick & West LLP, Two Palo Alto Square, Palo Alto, CA 94306 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>

**(54) Title:** METHOD OF MAKING A STRUCTURE WITH IMPROVED MATERIAL PROPERTIES BY MODERATE HEAT TREATMENT OF A METAL DEPOSIT

**(57) Abstract**

Deposition of metal in a preferred shape, including coatings (206) on parts (204), or stand-alone materials (300), and subsequent heat treatment (106) to provide improved mechanical properties. In particular, the method gives products with relatively high yield strength. The products often have relatively high elastic modulus, and are thermally stable, maintaining the high yield strength at temperatures considerably above 25 °C. This technique involves depositing a material (206) in the presence of a selected additive, and then subjecting the deposited material to a moderate heat treatment (106). This moderate heat treatment differs from other commonly employed "stress relief" heat treatments in using lower temperatures and/or shorter times, preferably just enough to reorganize the material to the new, desired form. For example, coating and heat treating a spring-shaped elongate member provides a resilient, conductive contact (212, 920, 1060) useful for electronic applications.

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